

REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Official Action dated March 3, 2004. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

Claims 1-3 are under consideration in this application. Claims 4-5 are being cancelled without prejudice or disclaimer.

Prior Art Rejections

Claims 1-3 were rejected under 35 U.S.C. § 103(a) on the grounds of being unpatentable over US Pat. No. 6,590,626 to Suzuki et al (hereinafter "Suzuki") in further view of US Pat. No. 6,064,455 to Kim (hereinafter "Kim"). The prior art references of An (6,392,724) was cited as being pertinent to the present application. These rejections have been carefully considered, but are most respectfully traversed.

The liquid crystal display device of the invention, as now recited in claim 1, comprises a liquid crystal display element having a pair of substrates and liquid crystal sandwiched between a pair of substrates and a backlight unit 3 which is arranged at a side opposite to a display surface of the liquid crystal display element. The backlight unit 3 includes a light guide body 14, a plurality of light sources 20, which are arranged at least along one side surface of the light guide body at a plurality of positions, whose distances from a display surface of the liquid crystal display element are different, each of the plurality of light sources 20 being separated from each other and irradiating light to the liquid crystal display element, a reflection member 22 which, in conjunction with the light guide body 14, covers the plurality of light sources therein along said side surface of the light guide body 14, said reflection member 22 having shielding means 30 (page 8, lines 21-24; Fig. 4) which is arranged between every two light sources of the plurality of light sources to prevent each light source from receiving light directly from any other light source (page 10; lines 19-25), and a housing member which houses the light guide body, the plurality of light sources and the reflection member. In particular, the reflection member 22 and the shielding means 30 are made of **metal**, the housing member is at least partially made of

metal, and the reflection member 22 is **thermally connected** with the **metal** portion of the housing member.

As admitted by the Examiner, Suzuki fails to teach or suggest its housing 6 (allegedly equivalent to the reflection member 22 of the invention) and lower case 57 (allegedly equivalent to the housing member of the invention) being made of metal (page 2, last three lines of the outstanding Office Action). Applicants further point out that Suzuki's its shielding means 8 is NOT made of metal, and Suzuki's housing 6 is NOT thermally connect with the lower case 57.

Kim's silver reflector sheet and lamp housing 240 and Kim's metal press flame 210 (Fig. 5) were relied upon by the Examiner to modify Suzuki into a metal housing 6 (~ the reflection member 22) and a metal lower case 57 (~ the housing member). However, Kim merely simplifies the manufacturing process by housing and fastening the lamp with the silver reflector 240 (col. 2, lines 31-37). Kim fails to teach or suggest any metal shielding means 8 between every two light sources of the plurality of light sources, since Kim only concerns one light source.

First of all, Applicants contend that there is no teaching of providing metal shielding means 8 between every two light sources of the plurality of light sources in either Suzuki or Kim. Suzuki only has PET (non-metal) separators 64, and Kim has NO separator at all, since it deploys only one lamp. Neither reference shows any teaching or suggestion for how to combine Suzuki's PET housing 63 having PET shielding means 64 with Kim's silver reflector sheet 240. One skilled in the art would not make a metal housing with metal separators as claimed by the Applicants based on the above prior teachings except by using Applicants' invention as a blueprint. Applicants will point out that a rejection based on hindsight knowledge of the invention at issue is improper.

Secondly, one skilled in the art would not be motivated to provide a metal housing 63 having metal shielding means in view of Kim's silver reflector sheet 240, since it is technically cumbersome to roll, for example, three of Kim's "*thin sheets made of argentum (Ag) as the lamp housing* (col. 4, lines 53-55)" to encompass three lamps to form a metal housing 63 with two separators 64 (Fig. 3 of Suzuki), which totally destroys Kim's intended purpose of providing the silver reflector sheet 240 to simply manufacturing steps.

Thirdly, Applicants respectfully contend that although the invention applies the general heat conductivity characteristic of metal, the invention applies metal to particular components with respect to a cold cathode fluorescent tube to achieve the above-mentioned unexpected results or properties unknown and non-inherent functions in view of Suzuki or Kim, since they do not inherently achieve the same results. In other words, these advantages would not flow

naturally from following the prior art teachings, since the prior art fails to suggest any "metal shielding means 8 between every two light sources of the plurality of light sources."

On the other hand, the invention has the reflection member 22 and the shielding means 30 both made of metal and the reflection member 22 thermally connected with a metal portion of the housing member to resolve a heating problem depicted in Fig. 6 of the specification, i.e., a correlation between the brightness and the temperature of the cold cathode fluorescent lamp. The cold cathode fluorescent lamp should be maintained below a particular temperature to exhibit the maximum illumination efficiency; otherwise, illumination efficiency sharply drops and the brightness reduces correspondingly as the temperature gets higher than a particular temperature (page 2, line 15 – page 3, line 8). This problem becomes more severe when the number of cold cathode fluorescent lamps increases. The invention efficiently radiates the heat by using metal to make the shielding means, the reflection member and at least a part of the housing member (page 4, line 24 – page 5, line 16; page 11, lines 1-16).

The presence of these unexpected properties, such as using metal reflecting members and shields and to conduct heat so as to maintain the temperature of a cold cathode fluorescent tube below a particular temperature to exhibit the maximum illumination efficiency, is evidence of nonobviousness. MPEP§716.02(a).

"Presence of a property not possessed by the prior art is evidence of nonobviousness. In re Papesch, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (rejection of claims to compound structurally similar to the prior art compound was reversed because claimed compound unexpectedly possessed anti-inflammatory properties not possessed by the prior art compound); Ex parte Thumm, 132 USPQ 66 (Bd. App. 1961) (Appellant showed that the claimed range of ethylene diamine was effective for the purpose of producing " 'regenerated cellulose consisting substantially entirely of skin' " whereas the prior art warned "this compound has 'practically no effect.' ").

Lastly, Applicants further contend that the mere fact that one of skill in the art could modify the material of the relevant components of Suzuki to meet the terms of the claims is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for one skilled in the art to provide the unexpected properties without the benefit of appellant's specification, to make the necessary changes in the reference device. *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd. Pat. App. & Inter. 1984). MPEP§2144.04

VI C. As mentioned, the Examiner must provide written teaching in the prior art to support such modification to allow accountability.

As mentioned in the previously filed response, Suzuki simply is not aware of nor concerned with the correlation between the brightness and the temperature of the cold cathode fluorescent lamp as depicted in Fig. 6. Suzuki merely discloses a problem of transmittance reduction due to contamination of the glass tube in use for a long time. Suzuki only concerns a problem of brightness reduction due to the light emitted from each fluorescent tube passing through the contaminated glass tube plural times (col. 7, line 51 – col. 8, line 33; col. 10, lines 44-54), rather than the characteristics depicted in Fig. 6.

Further, Suzuki specifically teaches that "*any type of fluorescent tube such as a **hot** cathode fluorescent tube or a **cold** cathode fluorescent tube may be used as the fluorescent tube* (col. 3, lines 50-52)," while in contrast the invention specifically uses only **cold** cathode fluorescent tube and controls its illumination efficiency temperature management. It is well established that a rejection based on cited references having contradictory principles or principles that teach away from the invention is improper.

Kim's silver reflector sheet 240 "*is used for fastening the lamp to the unit and reflecting light transmitted from the lamp to the light guide* (col. 4, lines 44-45)." Kim's metal press flame 210 "*is made of metal instead of plastic*" "*for fixing the lamp housing ..., which results in a thinner LCD than the conventional LCD* (col. 4, lines 56-58)." The thinner frame 210 "*provides high resistance against heat and surface impact and therefore, is scarcely bent or twisted* (col. 2, lines 38-41)". Kim is not aware of nor concerned with the correlation between the brightness and the temperature of the cold cathode fluorescent lamp as depicted in Fig. 6.

Further, Kim applies a general lamp without specifying "*a **cold** cathode fluorescent tube*," while in contrast the invention specifically uses only **cold** cathode fluorescent tube and controls its illumination efficiency temperature management.

Applicants contend that the combination of Suzuki and Kim fails to teach or disclose each and every feature of the present invention as disclosed in independent claim 1. As such, the present invention as now claimed is distinguishable and thereby allowable over the rejections raised in the Office Action. The withdrawal of the outstanding prior art rejections is in order, and is respectfully solicited.

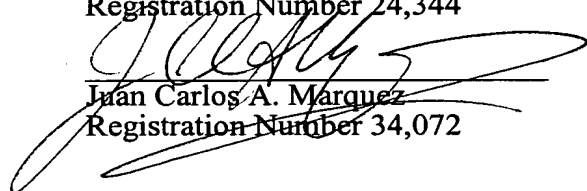
In view of all the above, clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejections in the Office Action rely, Applicants respectfully contend that the prior art references cannot anticipate

the present invention or render the present invention obvious. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and phone number indicated below.

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